

AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior listings of claims in this application.

1-23. (Canceled)

24. (Previously Presented) A method for memory management, the method comprising:

- receiving a fault notification from a first cache device, the fault notification including a fault page identifier and a fault line identifier;
- accessing a second cache device to determine if a line in a random access memory corresponds to the fault page identifier and the fault line identifier, wherein:
 - the random access memory includes at least one line associated with a page in a memory device;
 - the second cache device includes a plurality of tags each corresponding to one of the pages in the memory device;
 - each tag indicates the location in the random access memory of the at least one line associated with the page corresponding to the tag; and
 - each tag includes a reference history field that includes information about how lines in the corresponding page have been accessed in the past and is utilized to determine which lines from the corresponding page should be added to the random access memory when the tag is added to the second cache device;
- transmitting the line corresponding to the fault page identifier and the fault line identifier from the random access memory to the first cache device in response to the accessing resulting in locating the line corresponding to the fault page identifier and the fault line identifier in the random access memory; and
- updating the tag in the second cache device corresponding to the fault page identifier to reflect the transmitting.

25. (Previously Presented) A method for memory management, the method comprising:

- receiving a fault notification from a requestor, the fault notification including a fault page identifier and a fault line identifier;

determining if a tag corresponding to the fault page identifier is located in a tag cache, wherein the tag cache includes a plurality of tags, each tag includes a reference history field including information about how lines in the corresponding page have been accessed in the past and at least one pointer to lines in a prefetch buffer;

in response to locating the tag corresponding to the fault page identifier:

transmitting a line corresponding to the fault line identifier to the requestor; and

updating the tag corresponding to the fault page identifier to reflect the transmitting; and

in response to not locating the tag corresponding to the fault page identifier:

inserting a new tag corresponding to the fault page identifier into the tag cache;

transmitting the line corresponding to the fault line identifier to the requestor; and

inserting prefetch lines associated with the new tag into the prefetch buffer, wherein the inserting is performed via the tag cache and the prefetch lines are determined in response to contents of the reference history field in the new tag.

26. (Original) The method of claim 25 further comprising retrieving the line corresponding to the fault line identifier from a memory device.

27. (Original) The method of claim 25 further comprising retrieving the line corresponding to the fault line identifier from the prefetch buffer, wherein the retrieving is via the tag cache.

28. (Original) The method of claim 25 wherein the requestor is a cache device.

29. (Canceled)